To: CN=Tonya Fish/OU=R8/O=USEPA/C=US@EPA[]
Cc: []
From: CN=Tina Laidlaw/OU=MO/OU=R8/O=USEPA/C=US
Sent: Wed 4/1/2009 9:59:45 PM
Subject: Fw: April 2, 2009 Meeting Documents
April 2, 09 Agenda.2nd revision.doc
History.doc
PublicEntity_Worksheet_EPACostmodel_Vol10.xls
Additional Bill Links
PDF (with line numbers)
status of this bill
Status of this Bill
2009 Legislature
Leg. Branch Home
This bill in WP 5.1
All versions of all bills (WP 5.1 format)
Authorized print version w/line numbers (PDF format)
NEW SEARCH

FYI-

I plan to attend this meeting so I'll give you an update later this week or next week.

Tina

Tina Laidlaw
USEPA Montana Office
10 West 15th Street, Suite 3200
Helena, MT 59626
406-457-5016

----- Forwarded by Tina Laidlaw/MO/R8/USEPA/US on 04/01/2009 01:41 PM -----

Gerald Mueller <gmueller@montana.com>
03/30/2009 04:14 PM
To "Teegarden, Todd" <tteegarden@mt.gov>, jblend@mt.gov, tburton@ci.helena.mt.us, John Wilson <jwilson@cityofwhitefish.org>, Dick Hoenhe <pworks@blackfoot.net>, "esal21@juno.com" <esal21@juno.com>, Jim Jensen <jjensen@meic.org>, Don Allen <allen@allen-associatesmt.com>, "Edgcomb, Jim" <jedgcomb@mt.gov>, Scott Murphy <smurphy@m-m.net>, Dave Aune <daune@greatwesteng.com>, Dude Tyler <tylerd@orviscw.com>, "Bukantis, Bob" <bbukantis@mt.gov>, plavigne@mt.gov, "Suplee, Mike" <msuplee@mt.gov>, steve.troendle@mt.usda.gov, Terry McLaughlin <tmclaughlin@smurfit.com>, Garrett Budds <garrett@clarkfork.org>, Kate Miller <kmiller@mt.gov>, Tim Magee <tmagee@ci.helena.mt.us>, George Mathieus <gemathieus@mt.gov>, Debbie Shea <dshea@montanamining.org>, "Rep. Sue Dickenson" <suedickenson@yahoo.com>, Tina Laidlaw/MO/R8/USEPA/US@EPA, Claudia Massman <clmassman@mt.gov>, Greg.Gannon@Holcim.com, Debbie Shea <dshea@montanamining.org>
cc
Subject April 2, 2009 Meeting Documents

After discussions with George Mathieus and Mike Suplee, I have revised the agenda for Thursday's meeting again. The latest version of the agenda is attached. Also attached are a summary of the deliberations of the NCAAG to date, a copy of the public entity work sheets, and the current version of SB95. We will discuss the implications of passage of this bill for NCAAG and a possible transition to a new advisory committee.

We will again meeting in the Helena City-County office building on Park Street.

Please let me know if you will be unable to attend.

Thanks.
Gerald
2009 Montana Legislature
Additional Bill Links PDF (with line numbers)
SENATE BILL NO. 95
INTRODUCED BY J. BRUEGGEMAN
BY REQUEST OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY

A BILL FOR AN ACT ENTITLED: "AN ACT AUTHORIZING THE DEPARTMENT OF ENVIRONMENTAL QUALITY TO USE TEMPORARY NUTRIENT CRITERIA TO ESTABLISH PERMIT LIMITS FOR POINT SOURCE DISCHARGES TO SURFACE WATER; ESTABLISHING A TIME LIMIT FOR TEMPORARY CRITERIA; REQUIRING A REPORT TO THE ENVIRONMENTAL QUALITY COUNCIL; AND AMENDING SECTION 75-5-103, MCA."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA:

Section 1. Section 75-5-103, MCA, is amended to read:

"75-5-103. Definitions. Unless the context requires otherwise, in this chapter, the following definitions apply:

(1) (a) "Base numeric nutrient standards" means numeric water quality standards for total nitrogen, total phosphorus, and nitrate plus nitrite NUTRIENTS in surface water that are adopted to protect the designated uses of a surface water body.

(b) The term does not include numeric water quality standards for nitrate, nitrate plus nitrite, or nitrite that are adopted to protect human health.

(2) "Board" means the board of environmental review provided for in 2-15-3502.

(2)(3) "Contamination" means impairment of the quality of state waters by sewage, industrial wastes, or other wastes, creating a hazard to human health.

(3)(4) "Council" means the water pollution control advisory council provided for in 2-15-2107.

(4)(5) (a) "Currently available data" means data that is readily available to the department at the time a decision is made, including information supporting its previous lists of water bodies that are threatened or impaired.

(b) The term does not mean new data to be obtained as a result of department efforts.

(5)(6) "Degradation" means a change in water quality that lowers the quality of high-quality waters for a parameter. The term does not include those changes in water quality determined to be nonsignificant pursuant to 75-5-301(5)(c).

(6)(7) "Department" means the department of environmental quality provided for in 2-15-3501.

(7)(8) "Disposal system" means a system for disposing of sewage, industrial, or other wastes and includes sewage systems and treatment works.

(8)(9) "Effluent standard" means a restriction or prohibition on quantities, rates, and concentrations of chemical, physical, biological, and other constituents that are discharged into state waters.

(9)(10) "Existing uses" means those uses actually attained in state waters on or after July 1, 1971, whether or not those uses are included in the water quality standards.

(10)(11) "High-quality waters" means all state waters, except:

(a) ground water classified as of January 1, 1995, within the "III" or "IV" classifications established by the board's classification rules; and

(b) surface waters that:

(i) are not capable of supporting any one of the designated uses for their classification; or

(ii) have zero flow or surface expression for more than 270 days during most years.

(11)(12) "Impaired water body" means a water body or stream segment for which sufficient credible data shows that the water body or stream segment is failing to achieve compliance with applicable water quality standards.

(12)(13) "Industrial waste" means a waste substance from the process of business or industry or from the development of any natural resource, together with any sewage that may be present.

(13)(14) "Interested person" means a person who has a real property interest, a water right, or an economic interest that is or may be directly and adversely affected by the department's preliminary decision regarding degradation of state waters, pursuant to 75-5-303. The term includes a person who has requested authorization to degrade high-quality waters.

(14)(15) "Load allocation" means the portion of a receiving water's loading capacity that is allocated to one of its existing or future nonpoint sources or to natural background sources.

(15)(16) "Loading capacity" means the mass of a pollutant that a water body can assimilate without a violation of water quality standards. For pollutants that cannot be measured in terms of mass, it means the maximum change that can occur from the best practicable condition in a surface water without causing a violation of the surface water quality standards.

(16)(17) "Local department of health" means the staff, including health officers, employed by a county, city, city-county, or district board of health.

(17)(18) "Metal parameters" includes but is not limited to aluminum, antimony, arsenic, beryllium, barium, cadmium, chromium, copper, fluoride, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc.

(18)(19) "Mixing zone" means an area established in a permit or final decision on nondegradation issued by the department where water quality standards may be exceeded, subject to conditions that are imposed by the department and that are consistent with the rules adopted by the board.

(20) "NUTRIENT WORK GROUP" MEANS AN ADVISORY WORK GROUP, CONVENED BY THE DEPARTMENT, REPRESENTING PUBLICLY OWNED AND PRIVATELY OWNED POINT SOURCES OF POLLUTION, NONPOINT SOURCES OF POLLUTION, AND OTHER INTERESTED PARTIES THAT WILL ADVISE THE DEPARTMENT ON THE BASE NUMERIC NUTRIENT STANDARDS, THE DEVELOPMENT OF TEMPORARY NUTRIENT CRITERIA, AND THE IMPLEMENTATION OF THOSE STANDARDS AND CRITERIA TOGETHER WITH ASSOCIATED ECONOMIC IMPACTS.

(19)(20)(21) "Other wastes" means garbage, municipal refuse, decayed wood, sawdust, shavings, bark, lime, sand, ashes, offal, night soil, oil, grease, tar, heat, chemicals, dead animals, sediment, wrecked or discarded equipment, radioactive materials, solid waste, and all other substances that may pollute state waters.

(20)(21)(22) "Outstanding resource waters" means:

(a) state surface waters located wholly within the boundaries of areas designated as national parks or national wilderness areas as of October 1, 1995; or

(b) other surface waters or ground waters classified by the board under the provisions of 75-5-316 and approved by the legislature.

(21)(22)(23) "Owner or operator" means a person who owns, leases, operates, controls, or supervises a point source.

(22)(23)(24) "Parameter" means a physical, biological, or chemical property of state water when a value of that property affects the quality of the state water.

(23)(24)(25) "Person" means the state, a political subdivision of the state, institution, firm, corporation, partnership, individual, or other entity and includes persons resident in Canada.

(24)(25)(26) "Point source" means a discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or vessel or other floating craft, from which pollutants are or may be discharged.

(25)(26)(27) (a) "Pollution" means:

(i) contamination or other alteration of the physical, chemical, or biological properties of state waters that exceeds that permitted by Montana water quality standards, including but not limited to standards relating to change in temperature, taste, color, turbidity, or odor; or

(ii) the discharge, seepage, drainage, infiltration, or flow of liquid, gaseous, solid, radioactive, or other substance

into state water that will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, or welfare, to livestock, or to wild animals, birds, fish, or other wildlife.

(b) A discharge, seepage, drainage, infiltration, or flow that is authorized under the pollution discharge permit rules of the board is not pollution under this chapter. Activities conducted under the conditions imposed by the department in short-term authorizations pursuant to 75-5-308 are not considered pollution under this chapter.

(26)(27)(28) "Sewage" means water-carried waste products from residences, public buildings, institutions, or other buildings, including discharge from human beings or animals, together with ground water infiltration and surface water present.

(27)(28)(29) "Sewage system" means a device for collecting or conducting sewage, industrial wastes, or other wastes to an ultimate disposal point.

(28)(29)(30) "Standard of performance" means a standard adopted by the board for the control of the discharge of pollutants that reflects the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, when practicable, a standard permitting no discharge of pollutants.

(29)(30)(31) (a) "State waters" means a body of water, irrigation system, or drainage system, either surface or underground.

(b) The term does not apply to:

(i) ponds or lagoons used solely for treating, transporting, or impounding pollutants; or

(ii) irrigation waters or land application disposal waters when the waters are used up within the irrigation or land application disposal system and the waters are not returned to state waters.

(30)(31)(32) "Sufficient credible data" means chemical, physical, or biological monitoring data, alone or in combination with narrative information, that supports a finding as to whether a water body is achieving compliance with applicable water quality standards.

(32)(33) "Temporary nutrient criteria" means numeric permit limits for total nitrogen, total phosphorus, and nitrate plus nitrite NUTRIENTS that are based on a determination that the base numeric nutrient standards cannot be achieved by a particular point source discharger due to substantial and widespread economic impacts or the limits of technology.

(31)(33)(34) "Threatened water body" means a water body or stream segment for which sufficient credible data and calculated increases in loads show that the water body or stream segment is fully supporting its designated uses but threatened for a particular designated use because of:

(a) proposed sources that are not subject to pollution prevention or control actions required by a discharge permit, the nondegradation provisions, or reasonable land, soil, and water conservation practices; or

(b) documented adverse pollution trends.

(32)(34)(35) "Total maximum daily load" or "TMDL" means the sum of the individual waste load allocations for point sources and load allocations for both nonpoint sources and natural background sources established at a level necessary to achieve compliance with applicable surface water quality standards.

(33)(35)(36) "Treatment works" means works, including sewage lagoons, installed for treating or holding sewage, industrial wastes, or other wastes.

(34)(36)(37) "Waste load allocation" means the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources.

(35)(37)(38) "Water quality protection practices" means those activities, prohibitions, maintenance procedures, or other management practices applied to point and nonpoint sources designed to protect, maintain, and improve the quality of state waters. Water quality protection practices include but are not limited to treatment requirements, standards of performance, effluent standards, and operating procedures and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from material storage.

(36)(38)(39) "Water well" means an excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed and intended for the location, diversion, artificial recharge, or acquisition of ground water.

(37)(39)(40) "Watershed advisory group" means a group of individuals who wish to participate in an advisory capacity in revising and reprioritizing the list of water bodies developed under 75-5-702 and in the development of TMDLs under 75-5-703, including those groups or individuals requested by the department to participate in an advisory capacity as provided in 75-5-704."

NEW SECTION. Section 2. Temporary nutrient criteria. (1) The department may, on a case-by-case basis,

approve the use of temporary nutrient criteria for total nitrogen, total phosphorus, and nitrate plus nitrite in a discharge permit based upon adequate justification pursuant to subsection (2) that attainment of the base numeric nutrient standards is precluded due to substantial and widespread economic impacts or the limits of technology.

(2) (a) The department's determination that substantial and widespread economic impacts justify temporary nutrient criteria must be consistent with the United States environmental protection agency's guidance for analyzing economic impacts from water quality standards entitled "Interim Economic Guidance for Water Quality Standards Workbook", EPA-823-B-95-002, March 1995 DEPARTMENT, IN CONSULTATION WITH THE NUTRIENT WORK GROUP, SHALL DEVELOP GUIDELINES TO ENSURE THAT THE ECONOMIC IMPACTS FROM BASE NUMERIC NUTRIENT STANDARDS ON PUBLIC AND PRIVATE SYSTEMS ARE EQUALLY AND ADEQUATELY ADDRESSED. IN DEVELOPING THOSE GUIDELINES, THE DEPARTMENT AND THE NUTRIENT WORK GROUP SHALL CONSIDER ECONOMIC IMPACTS APPROPRIATE FOR APPLICATION WITHIN MONTANA AND MAY ALSO CONSIDER RELEVANT GUIDANCE OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY PERTAINING TO ANALYSIS OF ECONOMIC IMPACTS FROM WATER QUALITY STANDARDS.

(b) In the event that substantial and widespread economic impacts do not justify temporary nutrient criteria for a particular discharger, the department may approve temporary nutrient criteria based upon a finding that the limits of technology preclude the attainment of the base numeric nutrient standards. The department's determination that the limits of technology justify temporary nutrient criteria must be based on available and proven treatment technologies at the time the temporary nutrient criteria are approved.

(C) THE DEPARTMENT SHALL CONSULT WITH THE NUTRIENT WORK GROUP PRIOR TO RECOMMENDING BASE NUMERIC NUTRIENT STANDARDS OR CRITERIA TO THE BOARD AND SHALL CONTINUE TO CONSULT WITH THE NUTRIENT WORK GROUP IN IMPLEMENTING TEMPORARY NUTRIENT CRITERIA.

(3) The department shall review each application for temporary nutrient criteria on a case-by-case basis to determine if there are reasonable alternatives, such as trading or permit compliance schedules, that preclude the need for the temporary criteria.

(4) (A) Temporary nutrient criteria approved by the department become effective and may be incorporated into a permit only after a public hearing and adoption by the board DEPARTMENT under the rulemaking procedures of Title 2, chapter 4, part 3.

(B) TEMPORARY NUTRIENT CRITERIA MAY BE ESTABLISHED FOR A PERIOD NOT TO EXCEED 20 YEARS AND MUST BE REVIEWED BY THE DEPARTMENT EVERY 5 YEARS FROM THE DATE OF ADOPTION TO ENSURE THAT THE JUSTIFICATION FOR THEIR ADOPTION IS STILL VALID.

(C) ON OR BEFORE JULY 1 OF EACH EVEN-NUMBERED YEAR, THE DEPARTMENT, IN CONSULTATION WITH THE NUTRIENT WORK GROUP, SHALL REPORT TO THE ENVIRONMENTAL QUALITY COUNCIL THE RESULTS OF EACH REVIEW CONDUCTED IN THE PREVIOUS 2-YEAR PERIOD BY PROVIDING A SUMMARY OF THE STATUS OF THE BASE NUMERIC NUTRIENT STANDARDS, TEMPORARY NUTRIENT CRITERIA, AND IMPLEMENTATION OF THOSE CRITERIA, INCLUDING ESTIMATED ECONOMIC IMPACTS.

(D) ON OR BEFORE SEPTEMBER 1 OF EACH YEAR PRECEDING THE CONVENING OF A REGULAR SESSION OF THE LEGISLATURE, THE DEPARTMENT, IN CONSULTATION WITH THE NUTRIENT WORK GROUP, SHALL SUMMARIZE THE PREVIOUS TWO REPORTS PROVIDED IN SUBSECTION (4)(C) TO THE ENVIRONMENTAL QUALITY COUNCIL IN ACCORDANCE WITH 5-11-210.

NEW SECTION. Section 3. Codification instruction. [Section 2] is intended to be codified as an integral part of Title 75, chapter 5, part 3, and the provisions of Title 75, chapter 5, part 3, apply to [section 2].

- END -

Authorized print version w/line numbers (PDF format)
[NEW SEARCH]
Prepared by Montana Legislative Services
(406) 444-3064

DEQ Nutrient Criteria Affordability Advisory Group
Meeting 6
April 2, 2009
9:00 A.M. – 3:00 P.M.
Room 326 at the City County Building
326 N Park
Helena, Montana

Preliminary Agenda B Subject to Change

I. Welcome & Introductions

II. Meeting Agenda
The agenda for the meeting will be reviewed.

III. February 11, 2009 Meeting Summaries
Gerald Mueller will ask for corrections or additions to the summary.

IV. DOC's Concerns Regarding the Public Entity Affordability Criteria
Kate Miller will discuss her agency's concerns which center on the Substantial and Widespread Assessment spreadsheet and the possibility for DEQ to provide technical assistance/training in completing the spreadsheet, if needed.

V. Closure on the Private Entity Affordability Criteria
Dr. Mike Suplee and Dr. Jeff Blend will review and confirm the group's decisions on the public entity affordability criteria.

VI. Status of SB95
George Mathieus will discuss the status of the legislation to authorize DEQ to establish temporary nutrient criteria. As amended, this bill calls for creation of a new advisory group with a broader scope than the NCAAG. Mr. Mathieus will discuss the organization and possible activities of this new group.

VII. Next Meeting
- Date
- Agenda

Summary of the Deliberations of the DEQ Nutrient Criteria Affordability Advisory Group

DEQ Convening

DEQ created and convened the Nutrient Criteria Affordability Advisory Group in September 2008 to provide it advice regarding affordability criteria for surface water quality nutrients standards that address nitrogen and phosphorus. It did so because the Department was in the process of developing proposals for nitrogen and phosphorus water quality standards that would likely be set at low levels that may cause hardships for public and private entities that require discharge permits. DEQ hired a consultant (ICF International) in 2006 and 2007 to provide recommendations as to the most appropriate method for evaluating the affordability of numeric nutrient standards. As part of the two reports completed for DEQ, ICF recommended that DEQ convene a workgroup to refine aspects of existing U.S. Environmental Protection Agency (EPA) guidance. DEQ chose the members of the group to be representative of the interests in the affordability criteria, and that could provide expertise on the subject matter. The initial voting and non-voting members selected were as follows.

Voting Members

Tim Burton, Manager, City of Helena
John Wilson, Public Works Director, Town of Whitefish
Dick Hoehne, Public Works Director, Town of Philipsburg
Earl Salley, Water Pollution Control Advisory Committee
Jim Jensen, Montana Environmental Information Center
Don Allen, Western Environmental Trade Association
Brianna Randall, Clark Fork Coalition
Jim Edgcomb, Regulator of Affordability, Montana Department of Commerce
Scott Murphy, Wastewater Engineer, Morrison-Maierle Inc.
Dave Aune, Wastewater Engineer, Great West Engineering
Dude Tyler, Real Estate/Developer

Non-Voting Members

Todd Teegarden, Bureau Chief, DEQ Technical & Financial Assistance Bureau
Dr. Jeff Blend, Economist and Energy Analyst, DEQ Energy and Pollution Prevention Bureau
Dr. Michael Suplee, Environmental Science Specialist, DEQ Water Quality Planning Bureau

In February 2009, DEQ added two members to the group, Debbie Shea representing the Montana Mining Association and Terry McLaughlin representing Smurfit-Stone Container Corporation.

DEQ hired Gerald Mueller of Consensus Associates to facilitate the NCAAG.

Ground Rules

At its initial meeting in September 2008, the NCAAG unanimously adopted ground rules with provisions addressing group membership, purpose, and decision rule, and the role of its facilitator. Regarding the decision rule, the group decided to provide advice to DEQ based on a majority vote of its members. Dissenting views were to be noted by the group facilitator.

NCAAG Meetings

The group met five times from September 2008 through March 2009, and a sixth meeting was scheduled for April 2, 2009. Mr. Mueller prepared summaries of the meeting; the summaries are available from DEQ. Don Allen and Dude Tyler did not attend any of the NCAAG meetings.

Issues Addressed

DEQ asked NCAAG to consider separate criteria for affordability variances from nutrient standards for public and private entities.

Public Entities

For public entities, such as municipal waste water utilities, DEQ proposed a process recommended by the EPA for triggering an affordability variance. The first step was a screening process, the Municipal Preliminary Screener, in which the ratio of total pollution control cost per household to median household income (MHI) is calculated. This screener defines a threshold which determines if the community could then pass to the subsequent steps in the evaluation process. The subsequent steps determine whether the waste treatment improvement costs would result in both substantial *and* widespread economic impacts. Communities that do not advance beyond the Municipal Preliminary Screener are considered to be able to afford to meet the water quality standards and, therefore, would not be eligible for a variance.

Municipal Preliminary Screener - NCAAG discussed the threshold value for the screener. In addition to the screener as originally defined by EPA, NCAAG members added another component, so that the Municipal Preliminary Screener now has two parts. Added to the screener was a test that examines the proportion of individuals in the community in question falling into the low-to-moderate (LMI) income bracket (per LMI definitions used by the Montana Department of Commerce). This addition assured that communities with skewed income structure (i.e., a large proportion of both lower-income and high-income citizens, but few middle-income citizens) would be properly and fairly evaluated. In the new, two-part configuration of the Municipal Preliminary Screener, communities that would pay more than 1% MHI, or that have a proportion of citizens with a high LMI (>62%) regardless of the % MHI, would be eligible to be further considered for a variance via the subsequent steps in the substantial and widespread evaluation.

Substantial and Widespread Impact Test - NCAAG members considered in detail the content of the substantial and widespread tests to determine whether the additional treatment costs necessary to comply with nutrient standards would result in a substantial and widespread impacts. In applying these tests all members participating in the October 11, 2008 and the November 19, 2008 meetings agreed to the following:

- The evaluation should be based on the costs of the upgrade to the wastewater facility collection, treatment, and disposal system.
- The area included in the evaluation for the substantial test would be the governmental jurisdiction responsible for paying compliance costs. If only a proportion of the community is served, only those who pay are the affected community; however, if such fine-resolution data are not available, then data for the whole community may be used instead.

- The area included in the evaluation for the widespread test would be the geographic area where direct project costs pass through to the local economy. In the case of municipal pollution control projects, the affected community is often the immediate municipality. However, in some cases a community might be a central location serving the needs of the larger surrounding rural area; in such cases the affected community can be considered people living in a radius around the community (e.g., up 30 miles away).
- The definition of a resident used for these test is that used by the Montana Department of Commerce Census and Economic Information Center. During the census, a person declares their primary residency as that place where "they spend most of their time."
-
- The secondary tests are set out in EPA Work Sheet F with the following changes (see attached):
  - Drop the debt indicator and the second financial management indicator (the property tax collection rate over last ten years);
  - Assess both the poverty rate and the low-to-medium income (LMI) index as one of the socio-economic indicators, pending assurance that LMI data are available;
  - Change the first listed financial management indicator to include the sum of property tax and fee revenues per an income measurement (e.g. per capita household median income) rather than as a percent of full market value of taxable property.
- If application of the modified Worksheet F tests indicate that costs on the community would be substantial, or on the border between substantial and insubstantial, then the widespread test as recommended by the NCAAG would be applied. See the attached widespread test.
- An affordability variance would be granted if these tests determine that the costs on the community would be both substantial and widespread.

Tiered Approach to the Limits of Technology - In addition to an affordability variance, DEQ is considering providing a variance from the nitrogen and phosphorus numerical nutrient standards if an affordable nutrient removal technology capable of complying with the standards is not available. The NCAAG considered but did not adopt a three-tiered approach to the technology variance

1% Cost Cap - Those members that participated in the January 2009 meeting agreed unanimously to support a 1% of MHI cost cap for the affordability variance. Given that a community has demonstrated that it would incur both substantial and widespread economic impact from trying to comply with numeric nutrient standards, this means that total pollution control costs per household equal to 1% of the MHI are deemed bearable. The community would be expected to upgrade their wastewater treatment system for nutrient removal to that cost level. The actual cost per individual will vary from community to community as a function of each community's MHI. The reasons for selecting the 1% MHI threshold follow:

- It is apparently minimum value acceptable to EPA for granting a variance;
- The current economic downturn will make imposing new costs on cities and their waste water customers difficult;
- Several NCAAG members want to see progress on addressing non-point sources along with new requirements on point sources; and
- Details remain to be worked out regarding permitting, for example a multi-disciplinary approach.

It was also made clear during the NCAAG meetings that the variance is *only* for relief from the cost of meeting numeric nutrient water quality standards. Cost for meeting the EPA's National Secondary Treatment standards (required by EPA) or other water quality standards would not be eligible for a variance under this process. So, for example, if a community needed to spend 1.8% of median household income just to comply with the National Secondary Treatment standards, they would be asked to do so; however, they would not be asked at that time to do *additional* treatment for nutrient removal, as they have already exceed the 1% MHI cap established via the nutrient-standards variance process.

Private Entities

For private entities discharging to surface water, the affordability test recommended by EPA would include assessing the impact of the standards on net profitability and on the importance of the discharger to the community. At the February 11, 2009 NCAAG meeting, DEQ agreed to consider alternatives to the EPA profit focused approach for a private sector affordability variance, perhaps using an alternative and best available technology, i.e., limits of technology, and report back to the group at the next meeting.

Instructions: Review the instructions below for an overview of each step that needs to be taken for the economic analysis of a public wastewater facility. Then, start at Worksheet A and work through each of the worksheets until you finish the analysis. The next tab after this one--the 'Summary Worksheet' tab--is to be filled out after you work through each worksheet in order to summarize your results. For a Non-Degredation analysis, go directly to the second to last tab labeled "Non-Deg", read the instructions, and then start at Worksheet A.

Summarized below are the steps that need to be taken for the economic analysis of a public wastewater facility. Also provided to the right is a flowchart that summarizes those same steps. It is highly recommended that you read through the complete 'EPA Interim Economic Guidance for Water Quality Standards' (EPA Guidance) which can be found on-line at http://www.epa.gov/waterscience/standards/econworkbook/. The instructions in this Excel spreadsheet are not meant to be a substitute for the full EPA Guidance. The worksheets provided in this Excel document correspond directly to the EPA Guidance, although it is important to note that several **key changes** have been made from the EPA Guidance in various sections of this worksheet in order to tailor this analysis to Montana's needs.

OVERALL STEPS SUMMARY	**NOTES**
Step 1: Verify Project Costs and Calculate the Annual Cost of the Pollution control project	
Step 2: Calculate Total Annualized Pollution Control Costs Per Household	
Steps 3-5: The Substantial Test	
Step 3: Calculate and Evaluate the Municipal Preliminary Screener Score-- identifies only entities that can pay for sure	If the public entity passes a significant portion of the pollution control costs along to private facilities or firms, then the review procedures outlined in Chapter 3 of the EPA workbook for 'Private Entites' should also be consulted to determine the impact on the private entities.
Step 4: Apply the Secondary Test - This measurement incorporates a characterization of the the socio-economic and financial well-being of households in the community.	The ability of a community to finance a project may be dependent upon existing household financial conditions within that community.

Step 5: Assess where the community falls in The Substantial Impacts Matrix - This matrix evaluates whether or not communities are expected to incur **substantial** economic impacts due to the implementation of the pollution control costs. If the applicant cannot demonstrate substantial impacts, then they will be required to meet existing water quality standards. If they can demonstrate substantial imapcts, then the applicant moves on to the Widespread Test.	The evaluation of substantial impacts resulting from public entity compliance with water quality standards includes two elements, 1) financial impacts to the public entity (reflected in increased household wastewater fees) and 2) current socioeconomic conditions of the community. Governments have the authority to levy taxes and distribute pollution control costs among households and businesses according to the tax base. Similarly, sewage authorities charge for services, and thus can recover pollution control costs through users fees. In both cases, a substantial impact will usually affect the wider community. Whether or not the community faces substantial impacts depends on both the cost of the pollution control and the general financial and economic health of the community.

Step 6-Widespread Test

Step 6: If impacts are expected to be substantial, then the applicant goes on to demonstrate whether they are also expected to be **widespread** (Go to "DEQ Widespread Criteria" tab)**.**	Estimated *changes* in socio-economic indicators will be used to determine whether widespread impact has occurred

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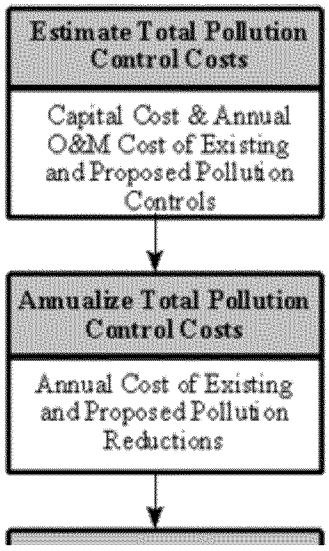
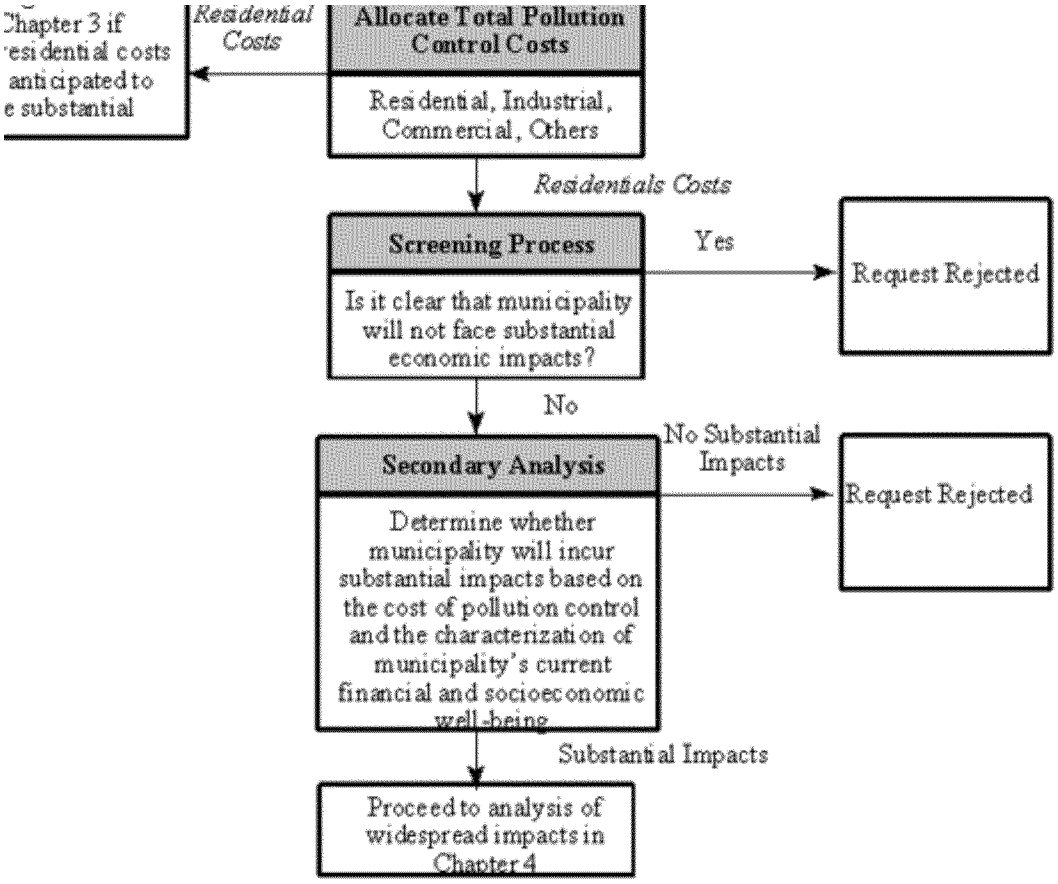
Figure 2-1:
Measuring Substantial Impacts
(Public Entities)



e guidance in Non-


Chapter 3 if
esidential costs
anticipated to
e substantial
Residential Costs
Allocate Total Pollution Control Costs
Residential, Industrial, Commercial, Others
Residentials Costs
Screening Process
Is it clear that municipality will not face substantial economic impacts?
Yes
Request Rejected
No
Secondary Analysis
Determine whether municipality will incur substantial impacts based on the cost of pollution control and the characterization of municipality's current financial and socioeconomic well-being
No Substantial Impacts
Request Rejected
Substantial Impacts
Proceed to analysis of widespread impacts in Chapter 4

you reach for each step for your analysis. This is help to give a simple overview of what you found out.

OVERALL STEPS SUMMARY

Step 1: Identify Project Costs and Calculate the Annual Cost of the Pollution control project _____

Step 2: Calculate Total Annualized Pollution Control Costs Per Household _____

Step 3: Calculate and Evaluate the Municipal Preliminary Screener Score-- identifies only entities that can pay for sure _____

Step 4: Apply the Secondary Test and Report what you find - This measurement incorporates a characterization of the community's current financial and socioeconomic well-being _____

Step 5: Assess where the community falls in The Substantial Impacts Matrix - This matrix evaluates whether or not communities are expected to incur **substantial** economic impacts due to the implementation of the pollution control costs. If the applicant cannot demonstrate substantial impacts, then they will be required to meet existing water quality standards. If they can demonstrate substantial imapcts, then the applicant moves on to the Widespread Test. _____

Step 6: If impacts are expected to be substantial, then the applicant goes on to demonstrate whether they are also expected to be **widespread in the study area** (Go to "DEQ Widespread Criteria" tab)**.** _____

Step 7: Present the Final Conclusion _____

sults that you reach for each step for

Tests for Substantial Impacts

Worksheet A--Pollution Control Project Summary Info

For the purposes of this workbook, a **public entity** refers to any governmental unit that must comply with pollution control requirements in order to meet water quality standards. The most common example is a municipality or sewage authority operating a publicly owned treatment works (POTW) that must be upgraded or expanded. Municipalities, however, may also be required to control other point sources or nonpoint sources of pollution within their jurisdiction.

Note: The most cost effective project is preferred. Public entities should consider a broad range of discharge management options including pollution prevention, end-of-pipe treatment, and upgrades or additions to existing treatment. Specific types of pollution prevention activities that should be considered are found in Chapter 2 of the EPA Guidence.

Whatever the approach, the applicant must demonstrate that the proposed project is the most appropriate means of meeting water quality standards and must document project cost estimates. ***If at least one of the treatment alternatives that meets water quality standards will not have a substantial financial impact, then the community should not proceed with the analysis presented in the rest of this workbook.***

For the "Substantial" portion of this test, please define the affected area and use that throughout this section. The area is defined as the governmental jurisdiction responsible for paying wastewater compliance costs--typically a town of municipality. If only a proportion of the community is served, only those who pay are the affected community; however, if such fine-resolution data are not available, then data for the whole community may be used instead.

_____

Current Capacity of the Pollution Control System (skip this for Non-Deg) _____ (million gallons p
Design Capacity of the Pollution Control System _____ (million gallons p
Current Excess Capacity % (skip this for Non-Deg) _____
Expected Excess Capacity after Completion of Project % _____
Projected Groundbreaking Date _____
Projected Date of Completion _____

Please describe the pollution control project being proposed, including drectly relevant infrastructure needed in addition to the plant (e.g. new sewage pipes) and how the project meets water quality standards:

Please describe the other pollution control options considered, explaining why each option was rejected. Explain how each alternative would have met water quality standards.

Is the proposed project the least expensive that can be used to meet the water quality standards goals? If not, give reasons why it is not.

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er day)

Tests for Substantial Impacts

Worksheet B-Calculation of Total Annualized Project Costs for Required Upgrades

Note: The capital portion of project costs is typically financed over approximately 20 years, by issuing a municipal debt instrument such as a general obligation bond or a revenue bond. Local governments may also finance capital costs using bank loans, state infrastructure loans (revolving funds), or federal subsidized loans (such as those offered by the Farmers Home Administation)

If project costs were estimated for some prior year, these costs should be adjusted upward to reflect current year prices using the average annual national Consumer Price Index (CPI) inflation rate for the period

Capital Cost of Project		$0
Other One-Time Costs of Project (Please List, if any):		
_____		$0
_____		$0
_____		$0
_____		$0
Total Capital Costs (Sum column) $ (1)		$0
Portion of Capital Costs to be Paid for with Grant Monies $ (2) (Paul)		$0
Capital Costs to be Financed [Calculate: (1) - (2)] $ (3)		$0
Type of financing (e.g., G.O. bond, revenue bond, bank loan)		
Interest Rate for Financing (expressed as decimal) (i)	0.02	
Time Period of Financing (in years) (n)	20	
Annualization Factor =[i/ [[(1+i)to nth power -1]]+i (or see Appendix B) (4)	0.06116	
Annualized Capital Cost [Calculate: (3) x (4)] (5)		$0

undergroun d pipes

Engineering Report

likely to be used.

by some factor to account for non-payment.

B. Operating and Maintenance Costs

Annual Costs of Operation and Maintenance (including but not limited to: monitoring, inspection,permitting fees, waste disposal charges, repair, administration and replacement.) (Please list below and state in terms of dollars per year)

	$0
	$0
	$0
	$0
Total Annual O & M Costs (Sum column) $ (6)	$0

C. Total Annual Cost of Pollution Control Project

Total Annual Cost of Pollution Control Project [(5) + (6)] $ (7)	$0

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g a municipal debt instrument such as a general
ans, state infrastructure loans (revolving funds), or

t current year prices using the average annual national

This includes costs of directly relevant new infrastructure needed to meet requirements such as underground pipes

This should be a realistic amount and should be identical to financing plans identified in the Preliminary Engineering Report

The interest rate should reflect the type of debt instrument likely to be used.

Loan coverage should be included - this applies to revenue bonds and varies between 110 to 125% depending on funding source. SRF is 125%. Loan coverage is the annual debt multiplied by some factor to account for non-payment.

Tests for Substantial Impacts

Worksheet C-Calculation of Total Annual Pollution Control Costs Per Household

Include those households in the study area that pay wastewater fees on the system in question.

directly into cell F19. It may still be useful to fill in the rows above that cell--especailly the percentage amount household are currently paying of the existing total wastewater fee. If the current fee being paid is not available, then you can use the formula provided here to estimate current annual fee.

A. Current Pollution Control Costs:

Current sewer rate

Total Annual Cost of Existing Pollution Control $ (1)	$0	infrastructure such as sewer lines
Amount of Existing Costs Paid By Households $ (2)	$0	
Percent of Existing Costs Paid By Households %(3)	_____	
Number of Households* (4)	0	
Annual Cost Per Household [Calculate: (2)/(4)] $ (5)		here to estimate current annual fee.

* Do not use number of hook-ups.

B. New Pollution Control Costs

Are households expected to provide revenues for the new pollution control project in the same proportion that they support existing pollution control? (Check a, b or c and continue as directed.)

a) Yes [fill in percent from (3)] percent.(6a) _____

b) No, they are expected to pay _____ percent.(6b) _____

c) No, they are expected to pay based on flow. (Continue on Worksheet C, Option A--See below) _____

Total Annual Cost of Pollution Control Project [Line (7), Worksheet B] $ (7)	0
Proportion of Costs Households Are Expected to Pay [(6a) or (6b)] (8)	50.00%
Amount to Be Paid By Households [Calculate: (7) x (8)] $ (9)	0
Annual Cost per Household [Calculate: (9)/(4)] $ (10)	ally add to the number found in F17 and give a final result in box F46.

C. Total Annual Pollution Control Cost Per Household

Total Annual Cost of Pollution Control Per Household (5) + (10) $ (11)

Worksheet C: Option A---Flow based

Calculation of Total Annual Pollution Control Costs Per Household--Flow based

A. Calculating Project Costs Incurred By Households Based on Flow

Expected Total Usage of Project (eg. MGD for Wastewater Treatment)		(1)
Usage due to Household Use (MGD of Household Wastewater)		(2)
Percent of Usage due to Household Use [Calculate: (2)/(1)]		(3)
Total Annual Cost of Pollution Control Project	$_____ (4)	(4)
Industrial Surcharges, if any	$_____ (5)	(5)
Costs to be Allocated [Calculate: (4) - (5)]	0	(6)
Amount to Be Paid By Households [Calculate: (3) x (6)]		(7)
Annual Project Cost per Household [Calculate: (7)/Worksheet C, (4)]		(8)

C. Total Annual Pollution Control Cost Per Household

Annual Existing Costs Per Household [Worksheet C, (5)]	(9)
Total Annual Cost of Pollution Control Per Household [(8) + (9)]	(10)

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al pollution control costs for households, it is recommended that
stewater fee that is currently being paid by households. You
from the municipality that is being studied. Once you obtain that
It may still be useful to fill in the rows above that cell--especailly
e currently paying of the existing total wastewater fee. If the
, then you can use the formula provided here to estimate current

This should include all existing charges related to wastewater treatment as well as fees associated with directly relevant existing wastewater infrastructure such as sewer lines

Use the actual current annual wastewater fee that is being paid by households. If the current fee being paid is not available, then you can use the formula provided here to estimate current annual fee.

As an alternative to the formula outlined here for new pollution control costs, you may instead use the rate the municipality is intending to charge customers to pay for the new WWTP. If this given rate includes both existing and new costs, then this is the final 'annual cost' number to be used in the municipal household screener in the next tab and the number to enter in box F46. If the new costs given are to be added on to existing costs, then enter the 'new cost' number in box F40, and this number will automatically add to the number found in F17 and give a final result in box F46.

Tests for Substantial Impacts

Worksheet D-Municipal Preliminary Screener

The Municipal Preliminary Screener indicates quickly whether a public entity will not incur any substantial economic impacts as a result of the proposed pollution control project. The formula is as follows:

(Total Annual Pollution Control Cost per Household/Median Household Income) X 100

Also added to this screener is a test of Low to Moderate Household Income Percentage rate to account for towns with a high Median Household Income, yet also with a disproportionately high number of low to moderate income households.

A. Calculation of The Municipal Preliminary Screener

Total Annual Pollution Control Cost Per Household [Worksheet C, (11) or Worksheet C, Option A (10)] (1) _____ then use that number rather than using the formula here

Median Household Income (MHI)* $ (2)
(use CPI to update income number to current year) _____ Estimates, found at http://www.census.gov/hhes/www/saipe/index.html

Municipal Preliminary Screener (Calculate: [(1)/(2)] x 100) %(3)

B. Evaluation of The Municipal Preliminary Screener

Impact level of additional water treatment costs is [Little, mid-range, large]--(see below) _____

Low to Moderate Income Percentage Rate of the town or community (LMI). See below for where the LMI percentage of your municipality falls . _____ at U.S. Census Bureau, Census 2000.

an undue financial burden and the analysis is done. In this case, no variance will be given and it is not necessary to continue with the Secondary Test in the next tab. If the Municipal Preliminary Screener benchmark comparison is 1% or greater, then it is necessary to continue to the secondary test in the next tab. Also, if the Municipal Preliminary Screener is clearly less than 1.0% and the LMI is 'high', then one may continue the analysis and move on to the Secondary Test.

Is a secondary test necessary? _____

Municipal Preliminary Screener Benchmark Comparison:

Little Impact	**Mid-Range Impact**
Less than 1.0%	1.0% - 2.0%
Indication of no substantial economic impacts	**Proceed to Secondary Tests**

Low to Medium Income Percentage Rate Benchmark Comparison:

Low	Mid-Range
Less than 33%	33-62%

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n or municipality has already calculated a new wastewater annual fee to account existing and new wastewater treatment levels, then use that ather than using the formula here

ce, Census and Economic Information Center, (406) 841-2740. She uses the U.S. Census Bureau, Small Area Income and Poverty Estimates, found ww.census.gov/hhes/www/saipe/index.html

data, contact Susan Ockert-Montana Dept of Commerce/Census and c Information Center, (406) 841-2740. This data also found at U.S. Census Census 2000.

, and the LMI is 'low' or 'mid-range', then it is assumed analysis is done. In this case, no variance will be given icipal Preliminary Screener benchmark comparison is lso, if the Municipal Preliminary Screener is clearly to the Secondary Test.

Large Impact
Greater than 2%

	High
	More than 62%

Tests for Substantial Impacts

Worksheet E: Data Used in the Substantial Impacts-Secondary Test

socioeconomic health of households in the community, and thus their ability to take on further costs of meeting additional water quality standards. In the data collection below, use the latest data available. Obtain as many of these values as possible by contacting (unless otherwise indicated) Susan Ockert at the Montana Department of Commerce, Census and Economic Information Center at (406) 841-2740. Again, for the "Substantial" portion of this test, the affected area is the governmental jurisdiction responsible for paying wastewater compliance costs--typically a town or municipality.

A. Data Collection for

Data	Potential Source
Poverty Rate of a town or community	Source: U.S. Census Bureau, Census 2000: Compiled by Census and Economic Information Center, Montana Department of Commerce, (406) 841-2740, www.ceic.mt.gov,
Low to Moderate Income Percentage Rate of a town or community (LMI)	Source: Census 2000, Susan Ockert-Montana Dept of Commerce/Census and Economic Information Center, (406) 841-2740, www.ceic.mt.gov,
Community Unemployment Rate	Source: Montana Department of Labor and Industry, Research and Analysis Bureau, Local Area Unemployment Statistics compiled by CEIC
Montana Unemployment Rate	Montana Dept of Labor and Industry, Research and Analysis Bureau, Local Area Unemployment stats compiled by CEIC.--Barbara Wagner. http://www.ourfactsyourfuture.org/cgi/dataanalysis/?PAGEID=94&SUBID=208. Taken from Bureau of Labor Statistics
Community Median Household Income	Susan Ockert-Montana Dept of Commerce, Census and Economic Information Center, uses data from the U.S. Census Bureau, Small Area Income and Poverty Estimates. That web site is http://www.census.gov/hhes/www/saipe/index.html
State Median Household Income	Susan Ockert-Montana Dept of Commerce/Census and Economic Information Center
Local Property Tax Revenues + Local Fees	*Annual Financial Reports of the Cities and Towns of Montana*, sheet entitled "Government-wide Statement of Activity", Local Government Services Bureau, Dept of Administration, State of Montana, Kim Smith, (406) 841-2905. or Community Financial Statements, Town, County or State Assessor's Office

City or town population	http://ceic.mt.gov/. Specifically, http://ceic.mt.gov/Demog/estimate/pop/City/SUB-EST2007-04-30.htm
Revenues, Taxes and Fees Burden Index (should automatically calculate)	(Total Property Tax, Fees & Revenues/Community MHI/population)*100

npacts

the socioeconomic health of households in the
standards. In the data collection below, use the
herwise indicated) Susan Ockert at the Montana
Again, for the "Substantial" portion of this test, the
e costs--typically a town or municipality.

_____ *(List town)*

Value	Notes
_____ %	Montana average is about 13.0%. See http://www.census.gov/hhes/www/saipe/modelinput.html and http://www.census.gov/hhes/www/saipe/nontechdoc/intro.html for more info
_____ %	
_____%	

4.9% --latest figure for state of Montana, Nov 2008

	See http://www.census.gov/hhes/www/saipe/modelinput.html and http://www.census.gov/hhes/www/saipe/nontechdoc/intro.html for more info
$43,531	for 2007

Tests for Substantial Impacts

Worksheet F- Substantial Impacts: Calculating the Secondary Score

The Secondary Test is designed to build upon the characterization of the financial burden identified in the Municipal Preliminary Screener.
The Secondary Test describes the socioeconomic health of the households in a community and thus their ability to pay for additional wastewater treatme

There are five socioeconomic criteria that are summed up and averaged to see where the households within a community fall in terms of financial health.
For each of the five criteria, a **strong** score is recorded in the right hand column as a '3', indicating strong socioeconomic health for that criteria and thus a greater chance of being able to pay for additional wastewater treatment (and lesser chance of a variance).
A **mid-range** score is recorded as a '2' and indicates moderate or average socioeconomic health for the particular criteria. A **weak** score should be recorded as a '1' and indicates poor socioeconomic health for the given criteria or less ability to pay (and a greater chance of being granted a variance).
The average score of all five indicators falls into those same categories and should be judged in the same way.

Note: The last criteria, Property tax, fees and revenues divided by MHI and population, gives an indication of the existing burden on local residents within the municipality of fees for local services and of local taxes. Those citizens of towns already paying a lot of money relatively for services such as wastewater and garbage and/or paying higher local taxes are assumed to be less able to pay additional monies for additional wastewater treatment.

Please record the scores in the final column. This table will sum the scores and compute an average. Then, move on to the next tab which is the Substantial Impacts Matrix.

Table 2-1 Secondary Indicators for the Municipality (or study area)

	Secondary Indicators				
	Indicator	Weak*	Mid-Range**	Strong***	Score
SocioEconomic Indicators	Poverty Rate	More than 22%	10-22%	Less than 10%	**2**
	Low to Medium Income Percentage (LMI)	More than 62%	33-62%	Less than 33%	**2**
	Unemployment	More than 1% above State Average (>5.9%)	State Average----4.9%	More than 1% below State Average (<3.9%)	**2**
	Median Household Income	More than 10% below State Median	State Median--$43,531	More than 10% above State Median	**1**
	Property Tax, fees and revenues divided by MHI and indexed by population	More than 3.5	3.5 to 2	Less than 2	**3**

Update this criteria every few years (or after a census)

* **Weak is a score of 1 point**
** **Mid-Range is a score of 2 points**
*** **Strong is a score of 3 points**

SUM: 10

AVERAGE: 2.00 divided by the number of Indicators given a score

http://www.epa.gov/waterscience/standards/econworkbook/table21.html

must
provide an explanation as to why the indicator is not appropriate or not available.

nt.

qual to the Sum divided by the number of
Indicators given a score

Tests for Substantial Impacts

Assessment of Substantial Impacts Matrix

Table 2-2
Assessment of Substantial Impacts Matrix

	Minicipal Preliminary Screener		
	Less than 1%	**1% to 2%**	**Greater than 2%**
Secondary score			
Less than 1.5	Borderline	X	X
Between 1.5 and 2.5	$	Borderline	X
Greater than 2.5	$	$	Borderline

Result:

_____

X-Impacts are Substantial: Move to widespread analysis
Borderline-Impacts may be Substantial: Move to widespread analysis
$-Impacts are not substantial and the community can pay: No variance

example, if the Screener score is 1.1 and the Secondary Score is 2.4, the analyst should note that although the town falls into the 'borderline' category, it comes close to falling into the '$' category.

into either the "X" or the "Borderline" category should proceed to
pter 4 in the EPA Guidance) to determine whether the impacts
also expected to be Widespread. The analyst should note if the
ther category. For example, if the Screener score is 1.1 and the
2.4, the analyst should note that although the town falls into the
, it comes close to falling into the '$' category.

Criteria for Widespread Impacts

DEQ Widespread Criteria - Factors to Consider in Making a Determination of Widespread Social and Economic Impacts

The financial impacts of undertaking pollution controls could potentially cause far-reaching and serious socioeconomic impacts. If the financial tests outlined in Chapter 2 and 3 of the EPA Guidance or in the Substantial Test tabs of this worksheet suggest that a discharger (public or private) or group of dischargers will have difficulty paying for pollution controls (that the effects will be Substantial), then an additional analysis must be performed to demonstrate that there will be widespread adverse impacts on the community or surrounding area. There are no economic ratios per se that evaluate socioeconomic impacts. Instead, the relative magnitudes of indicators such as increases in unemployment, losses to the local economy, and changes in disposable income should be taken into account when deciding whether impacts could be considered widespread. Since EPA does not have standardized tests and benchmarks with which to measure these impacts, the following guidance is provided as an example of the types of information that should be considered when reviewing impacts on the surrounding community.

At a minimum, the analysis must define the affected community (the geographic area where project costs pass through to the local economy), consider the baseline economic health of the community, and finally evaluate how the proposed project will affect the socioeconomic well-being of the community. Applicants should feel free to consider additional measures not mentioned here if they judge them to be relevant. Likewise, applicants should not view this guidance as a check list. In all cases, socioeconomic impacts should not be evaluated incrementally, rather, their cumulative effect on the community should be assessed.

Answer the four 'Descriptive Categories' as fully as possible. Then, answer the six primary criteria. **The answers to these primary criteria in relation to the Descriptive categories will form the backbone of the final answer to whether impacts would be Widespread.** If there is still uncertainty as to whether impacts are widespread, answer the Secondary questions. The Secondary questions are used to help answer the question of whether impacts are Widespread if the Primary Criteria do not yield a clearcut answer. The interdependence between the affected entity(ies) and the affect community is a major factor in demonstrating that the impacts are widespread.

INPUT CATEGORY	Weight of Importance	Answer
Descriptive		
Define the affected study area or community. This is the geographic area where direct project costs pass through to the local economy. In the case of municipal pollution control projects, the affected community is most often the immediate municipality. There are, however, exceptions where the affected community includes individuals and areas outside the immediate community. For example, if business activity of the region is concentrated in the immediate community, then outlying communities dependent upon the immediate municipality for employment, goods, and services should also be included in the analysis. Thus, the Widespread geographical area can encompass a greater area than the immediate town and/or those served by the wastewater system. It can encompass a greater area than defined in Substantial impacts.[1] (1)	Descriptive	
Describe the current general economic trend in the study area or community--qualitatively or quantitatively. (2)	Descriptive	
Name the main industry(s) in the study area and indicate if any major industries are intending to enter the area or leave the area. What is the current health of that main industry or of each industry if more than one? Is the boom and bust potential for the study area great? (3)	Descriptive	
Indicate the general population trend in the area. Is the community growing or shrinking? Specifically state if young people are staying in the area or leaving after they graduate school. (4)	Descriptive	

[1] Here are some examples. If business activity in the region is concentrated in a nearby community and not in the immediate community, then the nearby community may also be affected by loss of income in the immediate community and should be included in the analysis. Similarly, if a large number of workers commute to an industrial facility that is significantly affected by the costs, then the affected community should include the home communities of commuters as well as the immediate community.

Primary Criteria

Answer the following 'Primary' questions. If the answers to questions 5 through 10 clearly indicate that there would be No Widespread Impacts, you may answer the secondary questions or end the analysis. If the answers to questions 5 through 10 are inconclusive, then answer the secondary questions. If the answers to questions 5 through 9 indicate that Impacts are Widespread, and the answer to 10 indicates no widespread benefits from meeting standards, then there **will likely** be widespread impacts according to the analysis. In this case, you are not required to answer secondary questions, but you may if you want. If the answers to questions 5 through 9 indicate that Impacts will be Widespread, and answer to 10 is that there might be positive widespread benefits from meeting standards, then there may not be widespread impacts. Please answer secondary questions in that case.

Describe how the economy in general would be affected, if at all, by having to meet water quality standard. Items of discussion could include any loss in population, changes in median income, the closing (or moving to another area) of one or more businesses and industries, or the impact on community and/or commercial development potential in the study area. One can use the baseline data from the Substantial tests to support this answer. (5)	Primary Importance	

another area) of one or more businesses and industries, or the impact on community and/or commercial development potential in the study area. One can use the baseline data from the Substantial tests to support this answer. (5)	Primary Importance	
Will meeting the nutrient standards lead to a loss of employment due to a reduction in business activity or closure? If so, how many people do you estimate (or what % increase in unemployment rate) would become unemployed as a result? Please give specific examples of what might happen using your best professional judgement (6)	Primary Importance	
If unemployment occurred as a result of meeting standards, are there other ample job opportunities to take up the slack (refer to current unemployment rate in Secondary test)? Please give examples. (7)	Primary Importance	
Will meeting standards have a substantial effect on residential and commercial development patterns. For example, would homes and businesses choose to locate in different areas as a result of higher wastewater fees? In this answer, one may explore historical deveolopment patterns, financial and/or tax revenue impacts, population growth impacts, unintended impacts on water quality and any other potential consequences (good or bad). (8)	Primary Importance	
What would be the estimated impact, if any, on disposable income of having to meet standards? How would this change in disposable income affect the overall economy in the area under consideration? Please give specific examples of what might happen using your best professional judgement (9)	Primary Importance	
Would increased levels of water quality as a result of meeting water quality standards have any widespread positive economic and/or ecological effects on the community? Would expenditures on pollution controls to reach attainment have any positive effects on the community? (10)	Primary Importance	
Based on your answers to the primary questions, Is there a need to answer these secondary questions?	_____	If no, go to question 18. If yes, answer the secondary questions

Secondary Criteria

Answer these Secondary questions to the best of your ability. If you think any of these are of primary importance, explain further and explain why. Taken as whole, determine whether these secondary questions in addition to the Primary quesitons support or do not support that impacts would be widespread.

What would be the estimated change in Median Household Income, if any, as a result of having to comply with numeric nutrient standards? Describe qualitatively and/or qualitatively. If any change, how would this affect the Median Household Income of the community in comparison to the state median which is $43,531 (Source: Susan Ockert, CEIC, extracted from Decision Data Resources)? (10)	Secondary	_____
What would be the estimated change in poverty level, if any, as a result of having to comply with water quality standards and would that change the comparison to the Montana average? The Montana average percent of households below the poverty line is 14.6%. (11)	Secondary	_____
What would be the impact on property values within the affected area, if any, from having to meet numeric nutrient standards? (12)	Secondary	_____
Is a large percentage of the wastewater treatment plant used by one or a few entities that would be affected by water quality standards? If yes, and these entities were hurt or closed down as a result of pollution control costs, would significant burden be placed on the rest of the users of that system? (13)	Secondary	_____
If appropriate, would there be any multiplier effects from cost or benefits as a result of having to meeting numeric nutrient criteria? In other words will a dollar lost or gained as a result of the criteria result in the loss or gain of more than one dollar in the study area (e.g. direct and indirect spending)? (14)	Secondary	_____
What would be the estimated change in overall net debt of the municipality as a result of having to meet numeric nutrient standards? (15)	Secondary	_____

What would be the estimated change in overall net debt of the municipality as a result of having to meet numeric nutrient standards? (15)	Secondary	
(For non-deg only). In the case of non-degradation, what is the community's majority opinion on growth and/or the entity coming into the town/region and building a facility? What is the community's majority opinion on degradation of the receiving stream's high quality water? (16)	Most Important (non-deg)	
Is there any additional information that suggests that there are unique conditions in the affected community that should also be considered? (17)	Secondary	
Based on the criteria you just filled out and on your own judgement, will this community experience widespread impacts (or 'Important Impacts' for Non-Deg)? Please describe how you reached this decision. (18)		

ARRIVING AT A CONCLUSION: The main question to ask is whether widespread economic impacts are likely to occur in the study area as a result of attempting to comply with numeric nutrient standards? (yes/no) The key aspect of a "widespread determination" is that it evaluate change in the socioeconomic conditions that would occur as a result of compliance (EPA 1995).

The analyst should take into account as many of the factors listed above as possible when making a decision on whether impacts are widespread. The decision should be made based on all appropriate factors in a comprehensive manner (rather than as a checklist). The analyst will use his or her judgement on whether all the factors taken together (including some that may not be on this list) constitute widespread impact. Likewise, applicants should not view this guidance as a check list. In all cases, socioeconomic impacts should not be evaluated incrementally; rather, their cumulative effect on the community should be assessed as a whole. Applicants should feel free to use anecdotal information to describe any current community characteristics or anticipated impacts that are not listed in the worksheet.

The analyst may want to weight some of these factors more than others. In some cases, the results from a single category might be sufficient to determine whether widespread impacts will occur, even if other factors suggest differently. These categories are weighted by how important they are relative to the general idea "widespread" is attempting to address, although the analyst can use their own weights if supported by evidence.

In most cases, impacts at the state level will be relatively minor. If not, then impacts are, BY DEFAULT, widespread

There may be secondary impacts from having to meet numeric nutrient standards (not captured by the primary and secondary tests to the community). Secondary impacts, for example, might include depressed economic activity in a community resulting from the loss of purchasing power by persons losing their jobs or leaving the area due to increased user fees.

Reductions in employment caused by compliance with the water quality standards could be widespread if workers have no other employment opportunities nearby. Impacts may also be significant where the public entity(ies) is a primary producer of a particular product or service upon which other nearby businesses or the affected community depend. The impacts of reduced business activities or closure will be far greater in this case than if the products are sold elsewhere.

Potentially, one of the most serious impacts on the affected community's economy is the loss of employment caused by a reduction in business activity or closure. Applicants should also consider whether the lack of alternative employment opportunities may lead to an increased need for social services in the affected community.

Helpful Resources

See http://censtats.census.gov/usa/usa.shtml and http://censtats.census.gov/usa/usa.shtml. Also, contact Susan Ockert-Montana Dept of Commerce/Census and Economic Information Center, (406) 841-2740.

contact Susan Ockert-Montana Dept of Commerce/Census and Economic Information Center, (406) 841-2740.

Contact Susan Ockert-Montana Dept of Commerce/Census and Economic Information Center, (406) 841-2740 or go to http://ceic.mt.gov/Demog/estimate/pop/City/SUB-EST2007-04-30.htm

what if triggering nondeg is
a result of just general
growth in the community?

example, in a rural community where the primary source of employment is agriculture, the reduction of fertilizer and pesticide runoff from farms would reduce the cost of treating irrigation water to downstream users. Another example might be an industrial facility discharging its wastewater into a stream that otherwise could be used for recreational cold-water fishing. Treatment or elimination of the industrial wastewater would provide a benefit to recreational fishermen by increasing the variety of fish in the stream. In both cases, the economic benefit is the dollar value associated with the increase in beneficial use or potential use of the waterbody. The types of economic benefits that might be realized will depend on both the characteristics of the polluting entity and characteristics of the affected community, and should be considered on a case by case basis.

to which benefits can be considered in the economic impact analysis. This determination should be coordinated with the EPA Regional Office. A more detailed description of the types of benefits that might be considered is given in Appendix C. This appendix is not intended to provide in-depth guidance on how to estimate economic benefits; rather, it is intended to give States an idea of the types of benefits that might be relevant in a given situation.

between the intrinsic value of the existence of the resource and its value in use by the human population. Use values are further subdivided into direct or indirect uses. Other valuation concepts arise from the uncertainty surrounding future uses and availability of the resource. A classification of these valuation concepts, along with examples, is presented in Table C-1 below.

C.1 Use Benefits

resource and its uses. A waterbody might be used for recreational activities (such as fishing, boating, swimming, hunting, bird watching), for commercial purposes (such as industrial water supply, irrigation, municipal drinking water, and fish harvesting), or for both. Where recreational activities are created or enhanced due to water quality improvements, the public will benefit in the form of increased recreational opportunities. Similarly, the cost of treating irrigation and drinking water to down stream users could be reduced if pollutant discharges were reduced or eliminated in a particular stretch of river.

non-consumptive uses in that the former excludes other uses of the same resource while the latter does not. For example, water is consumed when it is diverted from a waterbody for irrigation purposes. With non-consumptive uses, however, the resource base remains in the same state before and after use (e.g., swimming). Human health benefits associated with cleaner water could be consumptive (reduced illness from eating finfish or shellfish) or non-consumptive (reduced exposure to infectious diseases while recreating).

its use). For example, commercial fisheries have a market value reflected by the financial value of landings of a particular species. By contrast, no market exists to describe the value individuals receive from swimming. Where market values are available, they should be used to estimate benefits. In the case of water supply, there may or may not be a market for clean water. Some water users may be required to pay for that use as in the case of a farmer paying a regional water board to divert water for irrigation purposes. This will be particularly true in the arid west. By contrast, a manufacturing facility using water for cooling or process water may not pay anything for the right to pump and use water from an adjacent river. For resources with no market value, a number of estimation techniques including the travel cost, estimation from similar markets, and contingent valuation methods have been developed.

While they are conceptually distinct attributes, consumptive use is frequently associated with markets and non-consumptive use is frequently associated with non-market situations. Some resources that are considered market resources, however, may be used non-consumptively. The converse is also true. As an example of the first, a fee may be charged (other than parking) to gain entrance to a state park, however, while a swimmer's use of a lake in the park is not consuming any part of the lake.

indirect use. Examples would be a fishing equipment manufacturer's dependence on healthy fish stocks to induce demand for its products or the dependence of property values on the pristine condition of an adjacent water body. Indirect use is also characterized by the scenic views and water enhanced recreational opportunities (camping, picnicking, birdwatching) associated with the quality of water in a water body. Indirect use benefits such as enhanced property values can be estimated using the hedonic price technique. Care should be taken, however, to not double-count benefits. If property values reflect the proximity to and thus use of water, then the value of the use should not be included separately.

C.2 Intrinsic Benefits

the resource. Intrinsic benefits are represented by the sum of existence and option values. Existence value indicates an individual's (and society's) willingness to pay to maintain an ecological resource such as clean water for its own sake, regardless of any perceived or potential opportunity for that individual to use the water body now or in the future. Contributions of money to save endangered species such as the snail darter demonstrate a willingness to pay for the existence of an environmental amenity despite the fact that the contributors may never use it or even experience it directly.

routinely pay to store or transport something they are not sure they will use in the future because they recognize it would be more costly to recreate the item than to preserve it. In an ecological sense, pristine habitats and wildlife refuges are often preserved under the assumption that plant or animal species which may yield pharmaceutical, genetic, or ecosystem benefits are yet to be discovered. Option value takes on particular importance when proposed development or environmental perturbations are largely irreversible or pollutants are persistent. Intrinsic benefits are difficult to measure due to the level of uncertainty associated with these benefits. The most common approach to estimating intrinsic benefits, however, is the contingent valuation method, which cannot be described in detail within this short overview.

C.3 Summary: Summarize the Water Quality Benefits of this pollution control project

Total valuation of clean water benefits includes all use and existence values as well as option value. The proper framework for estimating the economic benefits associated with clean water consists of 1) determining when damage first occurs or would occur; 2) identifying and quantifying the potential physical/biological damages relative to an appropriate baseline; 3) identifying all affected individuals both due to potential loss of direct or indirect services or uses, and to potential losses attributable to existence values (may include projections for growth in participation rates); 4) estimating the value affected individuals place on clean water prior to potential degradation; and 5) determining the time horizon over which the waterbody would be degraded or restored to some maximum reduced state of service (if ever), and appropriately discounting the stream of potential lost services. If evaluating an improvement in water quality, the procedures are the same except that benefits gained are measured.

Table C-1: Categories of Use Benefits

Direct	Indirect	Intrinsic
Consumptive:	Fishing Equipment Manufacturer	Option Value (access to resource in future)
Market Benefits	Property Values	Existence Value (knowledge that services of resource exist)
Industrial Water Supply Agricultural Water Supply Municipal Water Supply	Aesthetics (scenic views, water enhanced recreation)	

Commercial Fishing

Non-Market Benefits

Recreational Fishing
Hunting
Industrial Water Supply
Agricultural Water Supply
Municipal Water Supply

Non-Consumptive:

Swimming
Boating
Human Health

water. For example, in a rural community where the
would reduce the cost of treating irrigation water to
tream that otherwise could be used for recreational
creational fishermen by increasing the variety of fish
beneficial use or potential use of the waterbody. The
ng entity and characteristics of the affected

e the extent to which benefits can be considered in
e. A more detailed description of the types of
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concepts, along with examples, is presented in Table C-

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Non-Degredation for a Public Entity

allows the public to make decisions about important environmental actions. Where the State intends to provide for development, it may decide that some lowering of water quality in "high-quality waters" is necessary to accommodate important economic or social development. Any such reduction in water quality, however, must protect existing uses fully and must satisfy the requirements for intergovernmental coordination and public participation.

To determine if water quality can be lowered for a new public development, the same tests are used as in this worksheet. However, the questions asked are slightly different.

Questions:
(1) Will the pollution controls required to maintain the high quality waters interfere substantially with the proposed public development in a way that compromises the community's current financial and socioeconomic well-being ? (Analogous to secondary test for Substantial Impacts)
(2) Is the proposed public development important economically and socially to the study area? (Analagous to Wide

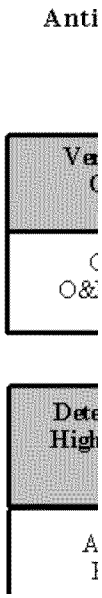
The tests used to demonstrate 'interference' and 'importance' are the same as those used to demonstrate substantial and widespread impacts. The difference is, however, that an antidegradation review considers situations that would improve the current economic condition as opposed to hurting them.

If the answer is no to either of questions 1 or 2 above, then the analysis is over---no degradation of water quality is by the pollution controls necessary to prevent degradation *is* an *important* economic and social development.

To answer question (1), please complete Worksheets A through F, and the Substantial Impacts Matrix.
To answer question (2), please complete the DEQ Widespread Criteria worksheet.
Complete the summary information on tab following this one entitled 'Non_deg Summary'.

An antidegradation review must determine that the lowering of water quality is necessary in order to accommodate social development in the area in which the waters are located.

While the terminology is different, the tests to determine substantial and widespread economic impacts (used when removing a use or granting a variance) are basically the same as those used to determine if there might be interference with an important social and economic development (antidegradation). As such, antidegradation analysis is the mirror image of the analyses described in Chapters 2, 3 and 4 of the EPA Guidance. Variences and downgrades
refer to situations where additional treatment needed to meet standards may result in worsening economic conditions; while antidegradation refers to situations where lowering water quality may result in improved social and economic conditions.



When performing an antidegradation review, the first question is whether the pollution controls needed to maintain the high-quality water will interfere with the proposed development. If not, then the lowering of water quality is not warranted. If, on the other hand, the pollution controls will interfere with development, then the review must show that the development would be an important economic and social one. These two steps rely on the same tests as the determination of substantial and widespread impacts.

The analytic approach presented here can be used for a variety of public-sector and private sector entities, including POTWs, commercial, industrial, residential and recreational land

uses, and for point and nonpoint sources of pollution.

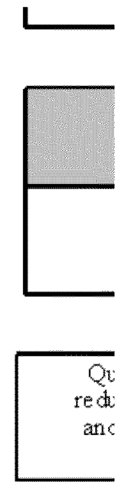


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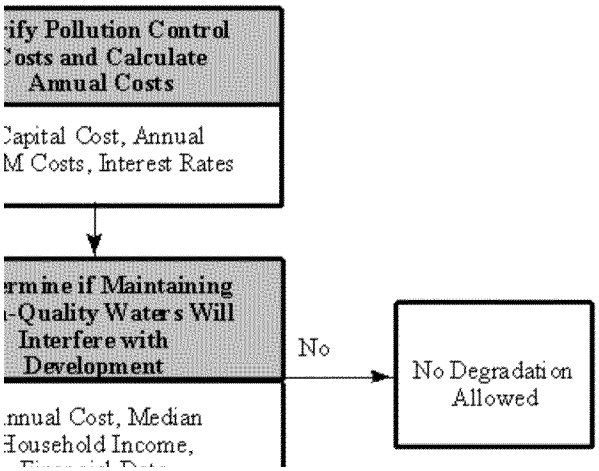
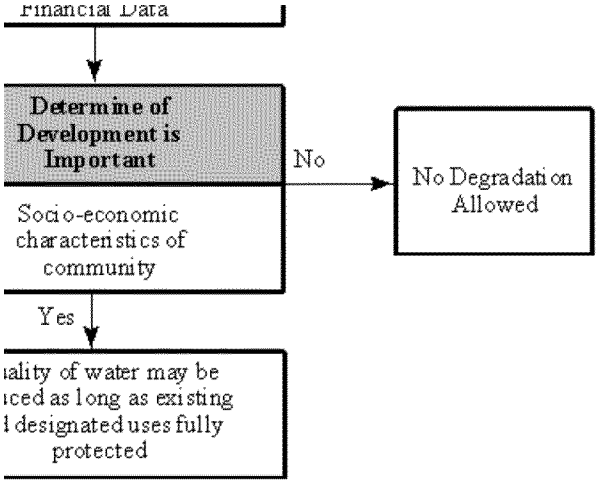
Figure 5-1:
degradation Review




Financial Data
Determine of Development is Important
No
No Degradation Allowed
Socio-economic characteristics of community
Yes
uality of water may be
iced as long as existing
l designated uses fully
protected

the results that you reach for each step for your analysis. This is help to give a simple overview of what you found out.

OVERALL STEPS SUMMARY

Step 1: Verify Project Costs and Calculate the Annual Cost of the Pollution control project

Step 2: Calculate Total Annualized Pollution Control Costs Per Household

Step 3: Calculate and Evaluate the Municipal Preliminary Screener Score-- identifies only entities that can pay for sure

Step 4: Apply the Secondary Test - Will the pollution controls needed to maintain the high-quality water interfere with the proposed public development in a way that compromises the community's current financial and socioeconomic well-being

Step 5: Assess where the community falls in The Substantial Impacts Matrix - This matrix evaluates whether or not communities are expected to incur **substantial** economic impacts due to maintaining high quality waters (e.g. interference with public project). If the applicant cannot demonstrate substantial impacts, then they will be required to meet existing water quality standards.

Step 6: If impacts are expected to be substantial on the community, then the applicant goes on to determine whether they are also expected to be 'important' (Go to "DEQ Widespread Criteria" tab to answer this question). For Non-deg, the question is: Is the proposed public development important economically and socially to the study area? (Analagous to Widespread Impacts Test)

Step 7: Present the Final Conclusion

marize the results that you reach for
und out.